SPECIFICATION AMENDMENTS:

Amend paragraph 0015 to read as follows:

According to a particularly preferred embodiment, the converter device comprises a first conductive layer and a second conductive layer, which are electrically insulated from one another by an insulator layer arranged between them, and at least one converter layer, which is preferably arranged on the first conductive layer and/or on the second conductive layer. The converter device therefore has a layered structure. The insulator layer used is, by way of example, a plastic film, in particular a polyimide film. So-called ~~Kapton~~ KAPTON films (~~Kapton~~ KAPTON is a trade name belonging to DUPONT) have proven particularly successful. This insulating layer electrically insulates the two conductive layers from one another. The conductive layers are preferably layers of metal which have been applied directly to the insulating layer by means of a coating process. In particular, copper layers are suitable for the conductive layers. The layered converter device also comprises a converter layer, which is preferably arranged on that surface of the first conductive layer and/or of the second conductive layer which is remote from the insulator layer. However, it is equally possible for the converter layer to be arranged between one of the conductive layers, which are in particular thin and structured, and the insulator layer. If the converter layer can be designed as a conductive layer, there is no need for an additional conductive layer in the converter device.

Amend paragraph 0016 to read as follows:

A particularly preferred layered converter device of this type can be produced by means of what are known as GEM films (gas electron multiplier films), as are described, for example, in US-A-6,011,265 and in the publication by F. Sauli in Nucl. Inst. and Methods A 386 (1997), pages 531 to 543. These GEM films described in the documents

cited are ~~Kapton~~ KAPTON films which are coated on both sides with copper and were developed in 1997 at CERN by F. Sauli. A photolithography process is used to etch a regular pattern of holes into these GEM films, without the copper top and bottom sides of the films being electrically connected to one another. With regard to the detailed disclosure in terms of production, structure and electrical circuitry and other properties of the GEM films, reference is made in full, in terms of the disclosure of the present invention, to the documents cited above, so that the disclosure of these documents is to form an integral part of the disclosure of the present invention. There is therefore no need to repeat in its entirety the detailed description of the GEM films explained in these documents.

Amend paragraph 0040 to read as follows:

Three converter devices 22 which are arranged in cascade form above one another are also provided in the detector housing 10. The converter devices 22 are located substantially in the drift field which is generated between the drift electrode 18 and the readout device 19. As illustrated in particular in Figure 3, the converter devices 22 are preferably of layered structure and consist, for example, of a GEM film (cf. above), which is coated on one or both sides with a solid converter layer 24 - in this case a neutron converter layer of boron-10. The converter layer 24 is preferably applied substantially homogeneously, although it is also possible for the converter layer 24 to be applied only in regions or in different layer thicknesses. Each of the converter devices 22 comprises an insulator layer 26, for example a polyimide film. ~~Kapton~~ KAPTON films have proven particularly appropriate (~~Kapton~~ KAPTON is a tradename belonging to DUPONT). The insulator layer 26 is coated on both sides with a conductive material, for example copper, so that it is arranged between a first conductive layer 28 and a second conductive layer 30. The two electrically conductive layers 28 and 30 are electrically insulated from one another

by the insulator layer 26. The converter device 22 also has a multiplicity of passages 32 which are arranged in the form of a matrix and through which electrically charged particles can drift, in a manner which is yet to be described. The arrangement pattern of these passages 32 which pass through the converter devices 22 in the direction normal to the layer plane is diagrammatically illustrated in Figure 2.

Amend paragraph 0041 to read as follows:

The structure, electrical circuitry and production of the GEM films from which it is easy to produce preferred converter devices 22 according to the invention are described in detail in US-A-6,011,265 and in the publication by F. Sauli, "GEM: A new concept for electron amplification in gas detectors", Nuclear Instruments and Methods in Physics Research A 386 (1997), pages 531-534. To avoid having to repeat all the aspects and properties of GEM films described in those documents, the text which follows refers fully to the disclosure of these cited documents. Therefore, the description in particular of the structure, electrical circuitry and production of the GEM films given in the above documents forms an integral part of the disclosure of the present invention. The GEM films (gas electron multiplier films) described in the documents cited are essentially ~~Kapton~~ KAPTON films which are coated with copper on both sides and were developed in 1997 at CERN by F. Sauli. A photolithography process is used to etch a regular pattern of holes into these GEM films, without the copper top and bottom sides of the films being electrically connected to one another.

Amend paragraph 0044 to read as follows:

As well as comb-like and interdigital readout structures 19 and 19' (cf. Figures 2a and 2b), which only supply the position information in one dimension, readout structures which are in a crossed arrangement with respect to one another and supply

position resolution in two dimensions are also of interest. A readout device 19" which has been modified in this way is diagrammatically illustrated in Figure 2c. In this case, two readout structures which cross one another are arranged on the top side and underside of a support plate. Annular readout structures are also of interest, primarily for scattering experiments, since they integrate over the entire azimuth angle and provide the entire intensity for a scattering angle. A readout device 19''' with an annular readout structure of this type is shown in Figure 2d.

Amend paragraph 0046 to read as follows:

As illustrated in the perspective exploded view shown in Figure 4(b), the clamping frame 42 has an upper frame element 44 and a lower frame element 46. The frame elements 44 and 46 consist of a conductive material, for example stainless steel. One of the converter devices 22 is held between the frame elements 44, 46 under a mechanical tensile stress which is such that it is fixed in substantially smooth form, without any creases. U-shaped insulating elements 48, for example ~~Kapton~~ KAPTON films, are inserted between respective layer sides of the converter device 22 and the frame elements 44 and 46, these insulating elements only allowing direct contact between the frame elements 44, 46 and the respective layer sides of the converter device 22 in regions. As a result, the converter device can be held in the clamping frame 42 in such a manner that its upper frame element 44 is electrically connected to the first conductive layer 24, and its lower frame element 46 is electrically connected to the second conductive layer, while the frame elements 44 and 46 are insulated from one another.

Amend paragraph 0049 to read as follows:

As is described in detail in US-A-6,011,265 and the above-mentioned publication by F. Sauli, GEM films, given suitable electrical connections, have charge-

transparent properties. As is diagrammatically illustrated in Figure 3, the electrical field lines of the drift field contract together in the region of the passages 32 of the converter devices 22 when a potential difference which assists the drift operation is applied between the first conductive layer 28 and the second conductive layer 30. The electrical field lines widen again symmetrically behind the passages 32 in the converter devices 22, as seen in the field direction, as indicated by field lines 34. A primary electron, which has been generated by the ionizing action of a conversion product in the counting gas, follows the path of one of the field lines illustrated in Figure 3 and therefore, through the passage 32, can be "passed" through one or more converter devices 22 while maintaining its position information.